



MENOPAUSE

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Menopause means permanent cessation of menstruation at the end of reproductive life due to loss of ovarian follicular activity. It is the point of time when last & final menstruation occurs. Menopause is associate with elevated serum FSH levels & variable length of menstrual cycle or missed menses.

Age of menopause: Ranges between 45 -55 yrs, Average- 50 yrs

The clinical diagnosis is confirmed when stoppage of menstruation for (twelve) 12 months without other pathology.

2 stages:

1. Pre menopause – the time before menopause.
2. Post menopause – the time after menopause.

Process of menopause:

At time of menopause, the ovarian activity reduces the ovulation fails; no corpus luteum is formed & hence no progesterone secretion, hence the cycles are anovulatory & irregular. Later estrogenic activity also reduce & thus the atrophic endometrium leads to menopause:

Organ	Changes
Ovaries	<ul style="list-style-type: none"> • Shrink in size • wrinkled • white • Thinning of cortex with increase in medullary component
Fallopian tube	<ul style="list-style-type: none"> • Atrophy, • Muscle coat becomes thinner • Cilia disappear
Uterus	<ul style="list-style-type: none"> • Becomes Smaller • Uterus: Cervix ratio becomes 1:1 • Endometrium – thin and atrophic May be proliferative or hyperplastic • Scanty cervical secretion
Cervix	<ul style="list-style-type: none"> • In the upper part of the vagina. The cervical secretion becomes scanty. • The cervical canal becomes narrow and in some cases is obliterated by surrounding fibrosis. Senile haematomata or pyometra may then occur due to deficient drainage.
Vagina	<ul style="list-style-type: none"> • Narrower due loss of elasticity • Vaginal epithelium becomes thin 3 • Absence of Doderlein's bacillus • Vaginal pH – alkaline • Maturation index – 10/85/5 (Parabasal, Intermediate, Superficial cells)
Fornices	<ul style="list-style-type: none"> • The fornices gradually disappear as the cervix regresses.
Vulva	<ul style="list-style-type: none"> • Atrophy • Vestibule and the skin of the labia minora becomes pale, dry, thin atrophic and more prone to infections. • Flattened labia • Scantier pubic hairs • Narrow introitus leads to Dyspareunia
Bladder and Urethra	<ul style="list-style-type: none"> • Thin epithelium prone for damage, infection • Dysuria • Stress incontinence • Prolapse of urethro-vesicular junction occur due to decreased pelvic support.

Breast fat	<ul style="list-style-type: none"> • Atrophy • Decrease in nipple size • Flat and pendulous breast
Loss of muscle tone	<ul style="list-style-type: none"> • Pelvic relaxation • Uterine descent • Anatomical changes in urethra and neck of bladder • Scanty pelvic cellular tissues • Loss in ligaments supporting uterus and vagina
Bone metabolism	<ul style="list-style-type: none"> • Osteoporosis – Reduction of bone mass but bone mass 4 to matrix ratio is normal. • Estrogen increases calcium absorption from gut and stimulates calcitonin secretion from C cells of thyroid which leads to mineralisation of bone.

B) Cardio Vascular Changes:

Heart, vessels	<p>Estrogen presents Cardio vascular diseases in several ways:</p> <ul style="list-style-type: none"> • ↑ HDL, ↓ LDL and total Cholesterol • Inhibits platelet aggregation • Stimulates release of nitric oxide (NO) and prostacycline from vascular endothelium to dilate blood vessels. Prevents atherosclerosis by its Antioxidant property.
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C) General Changes:

- 1) Woman becomes coarser in build and appearance.
- 2) She develops features suggestive of a mild degree of acromegaly.
- 3) The shoulders become flat and the waistline is lost.
- 4) The skin becomes wrinkled, thin, and more prone to damage and infection as skin collagen content is reduced in Menopause.
- 5) A slight growth of hair can be seen on the face especially round the lips and chin.
- 6) Body hair become sparser later in life and this is a part of senile changes affecting all organs. Axillaries and pubic hair are not much shed because these depend on the adrenal 5 rather than the ovary.
- 7) Fat is deposited around the breasts (in fatty women), hips and abdomen. So increase in weight is common at the climacteric, but it is not inevitable as it generally believed. It is related to an increase appetite or to a resort to eating in the face of emotional stresses as much as to an alteration in metabolism, which lowers the nutritional requirements.
- 8) In most cases, the blood pressure rises and cardiac irregularities and tachycardia sometimes occur.
- 9) Arthritic changes often develop in the joints and in some women osteoporosis may be seen, particularly in the spine and pelvic girdle, which renders these bones liable to fracture.

Menopausal Symptoms:

Vasomotor Symptoms	Genital & Urinary Symptoms	Psychological Symptoms	Other Important Symptoms
Hot Flushes Peripheral - Vasodilatation Sweating Palpitations	Dyspareunia Atrophic Vaginitis Endometritis Urinary Urgency Stress Incontinence Dysuria	Anxiety Headache Insomnia Irritability Depression Dementia, Mood Swings	Osteoporosis Back Pain

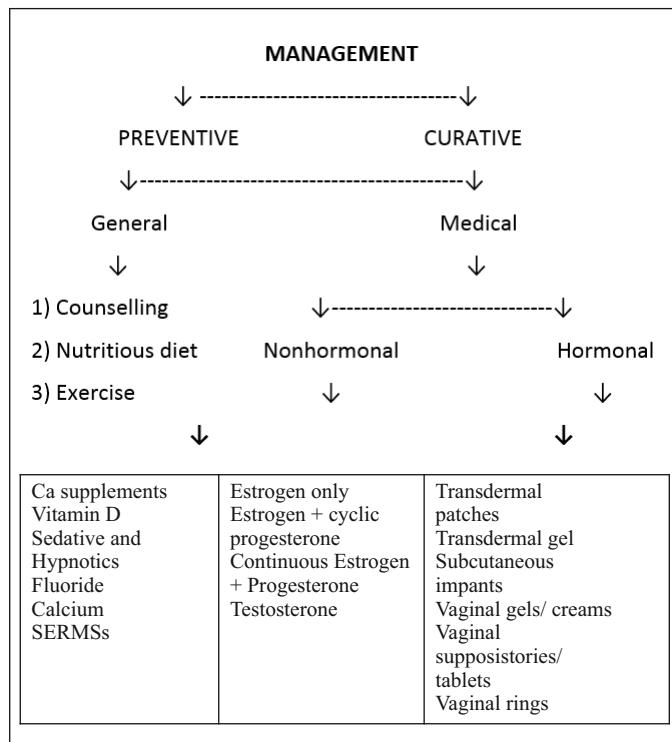
Diagnosis:

1) Vaginal cytology- show maturation index of atleast 10/85/5 (features of low estrogen), 2) Serum estradiol-<20pg/ml.

Serum FHS & LH >40 MIU/ml

Treatment:

1. Counseling
2. Non hormonal treatment
3. Hormonal treatment

**Non hormonal treatment-**

- Lifestyle modification (exercise)
- Reduce coffee intake, smoking, alcohol.
- Nutritional diet: Calcium, soy proteins, protein rich diet, vitamin E.
- Supplementary calcium 1-1.5 g
- Vitamin D supplement (1500-2000 IU/day)
- Cessation of smoking and alcohol.
- Hormonal treatment-
- Oral estrogen.
- Estrogen and cyclic progesterone.

Indication and Contraindication of HRT:

Indication	Contraindication
<ul style="list-style-type: none"> • Natural menopause; • Hot flushes • High risk for osteoporosis like, family • history, smoking, low body weight, • Vaginal atrophy • Urinary tract symptoms • radiographic evidence • Premature ovarian failure • Turner's syndrome • Gonadal dysgenesis • High risk for cardiovascular disease like, 	<p>Absolute</p> <ul style="list-style-type: none"> • Oestrogen dependent cancer in the body (e.g. endometrial cancer) • Active thrombophlebitis • Current gall bladder disease • Pregnancy • Undiagnosed uterine bleeding • Active or chronic liver disease <p>Relative</p> <ul style="list-style-type: none"> • Endometriosis • Hypertriglyceridemia • History of breast cancer

Side effects:

Endometrial cancer, breast cancer, venous thromboembolic disease, CHD, Lipid metabolism, Dementia and Alzheimer disease.